

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

Date of mailing (day/month/year) 07 November 2000 (07.11.00)	
International application No. PCT/EP00/02045	Applicant's or agent's file reference 81825
International filing date (day/month/year) 08 March 2000 (08.03.00)	Priority date (day/month/year) 10 March 1999 (10.03.99)
Applicant AMBROSOLI, Franco et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

04 October 2000 (04.10.00)

☐ in a notice effecting later election filed with the International Bureau on:
2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer R. E. Stoffel Telephone No.: (41-22) 338.83.38
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# P NT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

To:

ING. BARZANO & ZARNARDO MILANO  
S.P.A.  
Attn. DE GREGORI, Antonella  
Via Borgonuovo 10  
I-20121 Milan  
ITALY

Date of mailing  
(day/month/year)

15/05/2000

Applicant's or agent's file reference

81825

**FOR FURTHER ACTION**

See paragraphs 1 and 4 below

International application No.

PCT/EP 00/02045

International filing date

(day/month/year)

08/03/2000

Applicant

AMBROSOLI, Franco et al.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the International application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the International application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Eric Walsh

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

### Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

From the INTERNATIONAL BUREAU

PCT

**NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

To:

DE GREGORI, Antonella  
ING. Barzano' & Zanardo Milanos.  
S.p.A.  
Via Borgonuovo 10  
I-20121 Milan  
ITALIE

Date of mailing (day/month/year)

14 September 2000 (14.09.00)

Applicant's or agent's file reference

81825

**IMPORTANT NOTICE**

International application No.

PCT/EP00/02045

International filing date (day/month/year)

08 March 2000 (08.03.00)

Priority date (day/month/year)

10 March 1999 (10.03.99)

Applicant

AMBROSOLI, Franco et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 26, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU,DZ,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and a copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,  
GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,  
NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 14 September 2000 (14.09.00) under No. WO 00/53986

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

J. Zahra

Facsimile No. (41-22) 740.14.35

Telephone No. (41-22) 336.89.35

# PATENT COOPERATION TREATY

Ing. B. & Z. MILANO  
03. APR. 2000

From the RECEIVING OFFICE

## PCT

To:

De Gregori, Antonella  
BARZANO & ZARNARDO MILANOS  
S.P.A.  
Via Borgonuovo 10  
I-20121 Milan  
ITALIE



NOTIFICATION OF THE INTERNATIONAL  
APPLICATION NUMBER AND OF THE  
INTERNATIONAL FILING DATE

(PCT Rule 20.5(c))

Date of mailing (day/month/year)		30. 03. 2000
Applicant's or agent's file reference 81825		IMPORTANT NOTIFICATION
International application No. PCT/EP 00/ 02045	International filing date (day/month/year) 08/03/2000	Priority date (day/month/year) 10/03/1999
Applicant AMBROSOLI, Franco		
Title of the invention		

1. The applicant is hereby notified that the international application has been accorded the international application number and the international filing date indicated above.
2. The applicant is further notified that the record copy of the international application was transmitted to the International Bureau on the above date of mailing.
3. ☐ Other:

\* The International Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/IB/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c)).

Name and mailing address of the receiving Office  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer R. BEYTORUN 
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# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

**PCT/EP 00 / 02045**

International Application No.

**08 MAR 2000**

International Filing Date

(08.03.2000)

**EUROPEAN PATENT OFFICE  
PCT INTERNATIONAL APPLICATION**

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

**81825**

**Box No. I TITLE OF INVENTION** Equipment for detecting that a target has received a direct hit from a simulated weapon

**Box No. II APPLICANT**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**AMBROSOLI Franco  
Via Dolores Bello 5  
I -28100 NOVARA, Italy**

☒ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality:

**IT**

State (that is, country) of residence:

**IT**

This person is applicant  
for the purposes of:



all designated  
States



all designated States except  
the United States of America



the United States  
of America only



the States indicated in  
the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**PORZIO Massimo  
Via Cavourt12  
I- 28068 ROMENTINO-NOVARA  
Italy**

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box  
is marked, do not fill in below.)

State (that is, country) of nationality:

**IT**

State (that is, country) of residence:

**IT**

This person is applicant  
for the purposes of:



all designated  
States



all designated States except  
the United States of America



the United States  
of America only



the States indicated in  
the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf  
of the applicant(s) before the competent International Authorities as:



agent



common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

**DE GREGORI Antonella  
APPOLONI Romano      ING. BARZANO' & ZANARDO MILANOS.  
PARISI Luigi            S.p.A.  
ZANARDO Giovanni      Via Borgonuovo 10  
FUSINA Gerolamo      I- 20121 MILAN, Italy**

Telephone No.

**02 6554287**

Facsimile No.

**02 659 88 59**

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

## Regional Patent

TZ Tanzania

6/EP

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates                  | <input checked="" type="checkbox"/> LR Liberia   |
| <input checked="" type="checkbox"/> AL Albania                               | <input checked="" type="checkbox"/> LS Lesotho   |
| <input checked="" type="checkbox"/> AM Armenia                               | <input checked="" type="checkbox"/> LT Lithuania   |
| <input checked="" type="checkbox"/> AT Austria                               | <input checked="" type="checkbox"/> LU Luxembourg  |
| <input checked="" type="checkbox"/> AU Australia                             | <input checked="" type="checkbox"/> LV Latvia  |
| <input checked="" type="checkbox"/> AZ Azerbaijan                            | <input checked="" type="checkbox"/> MD Republic of Moldova   |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MG Madagascar  |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia                             |
| <input checked="" type="checkbox"/> BG Bulgaria                              |  |
| <input checked="" type="checkbox"/> BR Brazil                                | <input checked="" type="checkbox"/> MN Mongolia  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MW Malawi  |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MX Mexico  |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> NO Norway  |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NZ New Zealand   |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PL Poland  |
| <input checked="" type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> PT Portugal  |
| <input checked="" type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RO Romania   |
| <input checked="" type="checkbox"/> DK Denmark                               | <input checked="" type="checkbox"/> RU Russian Federation  |
| <input checked="" type="checkbox"/> EE Estonia                               | <input checked="" type="checkbox"/> SD Sudan   |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SE Sweden  |
| <input checked="" type="checkbox"/> FI Finland                               | <input checked="" type="checkbox"/> SG Singapore   |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SI Slovenia  |
| <input checked="" type="checkbox"/> GD Grenada                               | <input checked="" type="checkbox"/> SK Slovakia  |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> SL Sierra Leone  |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> TJ Tajikistan  |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TM Turkmenistan  |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TR Turkey  |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> TT Trinidad and Tobago   |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UA Ukraine   |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> UG Uganda  |
| <input checked="" type="checkbox"/> IN India                                 | <input checked="" type="checkbox"/> US United States of America  |
| <input checked="" type="checkbox"/> IS Iceland                               |  |
| <input checked="" type="checkbox"/> JP Japan                                 | <input checked="" type="checkbox"/> UZ Uzbekistan  |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> VN Viet Nam  |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> YU Yugoslavia  |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> ZA South Africa  |
|  | <input checked="" type="checkbox"/> ZW Zimbabwe  |
| <input checked="" type="checkbox"/> KR Republic of Korea                     | Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet: |
| <input checked="" type="checkbox"/> KZ Kazakhstan                            | <input checked="" type="checkbox"/> CR COSTA RICA  |
| <input checked="" type="checkbox"/> LC Saint Lucia                           | <input checked="" type="checkbox"/> DM DOMINICA  |
| <input checked="" type="checkbox"/> LK Sri Lanka                             | <input checked="" type="checkbox"/> MA MOROCCO   |
|  | <input checked="" type="checkbox"/> TZ TANZANIA  |
|  | <input checked="" type="checkbox"/> AL ALGERIA   |

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)



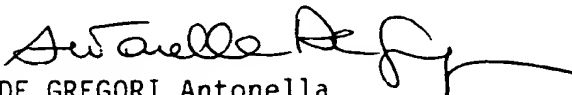
<b>Box No. VI PRIORITY CLAIM</b>		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 10 MARCH 1999 (10/03/1999)	MI99A000484	ITALY		
item (2)				
item (3)				

☐ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s):

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

<b>Box No. VII INTERNATIONAL SEARCHING AUTHORITY</b>			
<b>Choice of International Searching Authority (ISA)</b> (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):	<b>Request to use results of earlier search:</b> reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):		
ISA / EP	Date (day/month/year)	Number	Country (or regional Office)

<b>Box No. VIII CHECK LIST: LANGUAGE OF FILING</b>	
This international application contains the following number of sheets: request : 3 description (excluding sequence listing part) : 11 claims : 3 abstract : 1 drawings : 3 sequence listing part of description : Total number of sheets : 21	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input checked="" type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input checked="" type="checkbox"/> priority document(s) identified in Box No. VI as item(s): follows 6. <input checked="" type="checkbox"/> translation of international application into (language): ENGLISH 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): letter + SUB-AUTHORISATION
Figure of the drawings which should accompany the abstract: 1 and 2	Language of filing of the international application: ENGLISH

<b>Box No. IX SIGNATURE OF APPLICANT OR AGENT</b>	
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).	
 DE GREGORI Antonella	
2 MAR 2000	

Ro/EP

For receiving Office use only		2. Drawings:  <input checked="" type="checkbox"/> received:  <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:	08 MAR 2000 (08. 03. 2000)	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /		6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only	
Date of receipt of the record copy by the International Bureau:	

Form PCT/RO/101 (last sheet) (July 1998; reprint July 1999) See Notes to the request form

## PATENT COOPERATION TREATY

Ing. G. & Z. Milano  
17. MAG 2001From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

DE GREGORI, Antonella  
ING. BARZANO & ZARNARDO MILANO  
S.P.A.  
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I-20121 Milan  
ITALIE

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)Date of mailing  
(day/month/year) 14.05.2001Applicant's or agent's file reference  
81825

## IMPORTANT NOTIFICATION

International application No.  
PCT/EP00/02045International filing date (day/month/year)  
08/03/2000Priority date (day/month/year)  
10/03/1999Applicant  
AMBROSOLI, Franco et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

## 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Camps i Amigo, M.E.

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# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>81825</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) <b>FOR FURTHER ACTION</b>	
International application No. <b>PCT/EP00/02045</b>	International filing date ( <i>day/month/year</i> ) <b>08/03/2000</b>	Priority date ( <i>day/month/year</i> ) <b>10/03/1999</b>
International Patent Classification (IPC) or national classification and IPC <b>F41G3/26</b>		
Applicant <b>AMBROSOLI, Franco et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>04/10/2000</b>	Date of completion of this report  <b>14.05.2001</b>
Name and mailing address of the international preliminary examining authority:   <b>European Patent Office</b> <b>D-80298 Munich</b> <b>Tel. +49 89 2399 - 0 Tx: 523656 epmu d</b> <b>Fax: +49 89 2399 - 4465</b>	Authorized officer  <b>Ferla, M</b>  Telephone No. <b>+49 89 2399 2275</b>



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/02045

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1,3-10	as originally filed			
2,2a,11	as received on	28/02/2001	with letter of	27/02/2001

### Claims, No.:

2-7,8 (part)	as received on	28/02/2001	with letter of	27/02/2001
1,8 (part),9	as received on	12/04/2001	with letter of	10/04/2001

### Drawings, sheets:

2/3,3/3	as originally filed			
1/3	as received on	28/02/2001	with letter of	27/02/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/02045

listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☒ the claims, Nos.: 4,8,9,12,13  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims 1-9
	No: Claims
Inventive step (IS)	Yes: Claims 1-9
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-9
	No: Claims

2. Citations and explanations  
**see separate sheet**

## Section V

1. The invention concerns an equipment for detecting that a target has received a direct hit from a simulated weapon.  
The closest prior art is considered to be represented by patent EP 0 232 157 (A). This document describes an equipment including a weapon for providing signals produced by an emitter situated on its barrel and an helmet worn by a user including sensors for detecting these signals.
2. The particular arrangement of the equipment of the invention differs from that of the prior art in that a control device prevents the weapon of a user from being fired when a direct hit has been received by the target worn by the same user: this ensures that the game is over when one of the players has lost the simulated fight.  
The achievement of this effect with the combination of features defined in claim 1 is not considered to be obvious in view of the prior art. Therefore, claim 1 is considered to meet the requirements of **Article 33(3) PCT**.
3. Claims 2 - 9, by virtue of their dependence on claim 1, are also considered to meet the requirements of **Article 33(3) PCT**.
4. All the claims of this application are considered to relate to subject-matter which meets the requirements of **Article 33(2) PCT** [Novelty] and **Article 33(4) PCT** [Industrial Applicability].

\*\*\*\*\*

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In addition, the part which is hit by the dye must be replaced or cleaned thus causing certain drawbacks.

Furthermore, with plastic projectiles, it is not  
5 always possible to ascertain with certainty, whether or not the target has been hit. The general object of the present invention is to solve the abovementioned problem associated with the state of the art in an extremely simple, low-cost and highly  
10 practical manner.

Another object is to eliminate any chance of danger and avoid the need to replace or clean target parts which have been hit.

Another object is to assert that the shot has hit  
15 the target.  $\int < 2a > \int$

In view of the abovementioned objects, according to the present invention, it was decided to design equipment for detecting that a target has received a direct hit from a simulated weapon, possessing  
20 the features explained in greater detail in the enclosed claims. The design and practical features of the present invention, and its advantages compared to the known technique, will be made even clearer and apparent by the following description,  
25 referring to the enclosed drawings, which

## 2a

<WO-A-99/10700 relates to a firearm target system including a training firearm that emits laser signal in response to a mechanical wave generated from pulling the trigger of the firearm.

5

EP-A-0 232 157 refers to an equipment for detecting that a target has received a direct hit from a simulated weapon according to the preamble of claim 1.

US-A-4 487 583 describes a receiver garment for weapons engagement simulation system, wherein said garment carries a plurality of photosensitive detectors.

10

US-A-5 344 320 discloses a dual mode apparatus for assisting in the aiming of a firearm including laser apparatus.>

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as to avoid the random effect of external light sources.

The object mentioned in the preamble of the description is thus achieved in this way.

5 ~~Naturally, the embodiments can differ from those~~  
shown solely for illustrative and unrestricted  
purposes in the designs. In fact, the embodiment  
relating to a rifle range weapon has been described  
~~like any other form.~~

10 The invention is likewise applicable to real  
weapons loaded with blank rounds, where two  
adversaries fight each other, or in hunting which,  
with the use of the system according to the  
invention, could be called "fair hunting" since it  
15 is indeed without bloodshed.

It would be sufficient to fit the chosen animal  
with a photovoltaic sensor.

The scope of protection of the invention is  
therefore defined by the claims enclosed.

AMENDED SHEET

## CLAIMS

1. Equipment for detecting that a target has received a  
5 direct hit from a simulated weapon including a weapon (10,  
30) and a target (11, 12, 38, 45),
- said weapon (10, 30) providing an emitter of signals or  
laser shots (14, 33) operated by a switch (16, 35) and a  
trigger (18, 36)
  - 10 - said target including sensors (19, 20, 38a, 41-44) affixed  
to a supporting element (12, 11, 38, 45),
  - at least said sensors being operatively connected to an  
electronic detection circuit of a signal or laser shot  
received by said sensors,
  - 15 - said supporting elements being worn by an user and/or  
animal,
  - said emitter of signals or laser shots (14, 33) being  
situated on the barrel of a pistol (10) and/or rifle (30),  
said equipment comprising a control device or control  
20 electronic circuit. (50) characterised in that:
  - said control device is built around an RISC technology  
microcontroller (56) with the provision of power supply,
  - a direct hit indicator (59), a signaller (60) for  
indicating whether said weapon is unloaded, and a  
25 signaller (58) for detecting the presence of magazines  
(17, 40) in said weapon are connected to said

microcontroller (56), wherein said microcontroller (56) prevents said weapon from being fired when said indicator (59) is on.

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CLAIMS

~~1) Equipment for detecting that a target has received a direct hit from a simulated weapon including a weapon (10, 30) and a target (11, 12, 38, 45) and characterised in that said weapon (10,30) provides an emitter of signals or laser shots (14, 33) operated by a switch (16, 35) and a trigger (18, 36), and in that said target includes sensors (19, 20, 38a 41-44) affixed to a supporting element (12, 11, 38, 45), at least said sensors being operatively connected to an electronic detection circuit of a signal or laser shot received by said sensors.~~

2) Equipment according to claim 1, characterised in that said sensors (19, 20, 38a, 41-44) are photovoltaic sensors.

3) Equipment according to claim 1, characterised in that said supporting elements are a jacket (11) and a helmet (12).

~~4) Equipment according to claim 1, characterised in that said supporting elements are a vest (38) worn by the user and/or animal.~~

4/5) Equipment according to claim 1, characterised in that said supporting elements are <sup>directly</sup> comprised of a

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target (45).

5 ~~8~~) Equipment according to claim 1, characterised in that said weapon is a pistol (10).

6 ~~7~~) Equipment according to claim 1, characterised in  
5 that said weapon is a rifle (30).

~~8) Equipment according to claim 1, characterised in that said emitter of signals or laser shots (14, 33) is situated on the barrel of a pistol (10) and/or rifle (30).~~

10 9) Equipment according to claim 1, characterised in that it envisages a control device or control electronic circuit of said equipment (50) built around an RISC technology microcontroller (56) with  
~~the provision of power supply.~~

15 ~~7~~ <sup>1</sup> ~~10~~) Equipment according to claim ~~8~~, characterised in that in support of said microcontroller (56), for that concerning the processing of a signal detected by said sensors (19, 20, 38a) is provided an amplification and filtering chain to eliminate  
20 random components from said signal and make said signal compatible with said microcontroller (56).

~~8~~ <sup>7</sup> ~~11~~) Equipment according to claim ~~10~~, characterised in that said chain includes an attenuator circuit (51) fitted upstream an amplifier (54), which is

25 integrated upstream and downstream by high-pass

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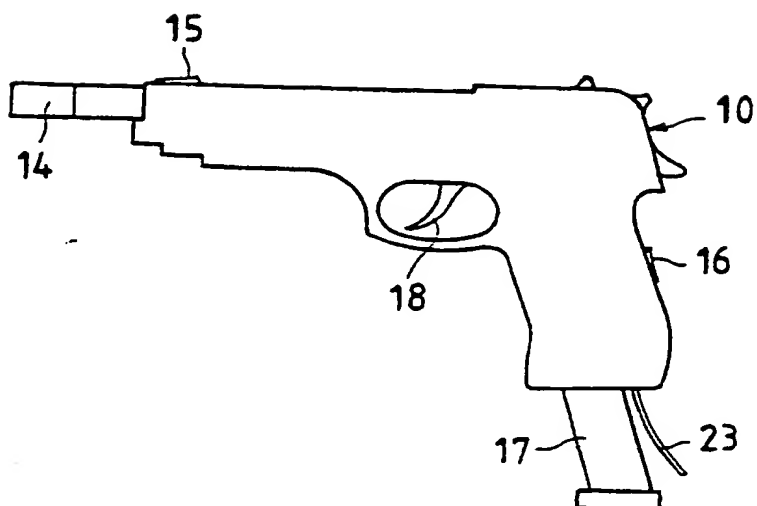
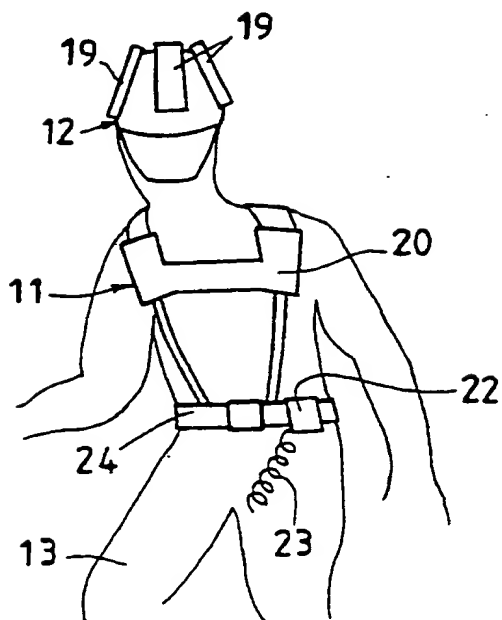
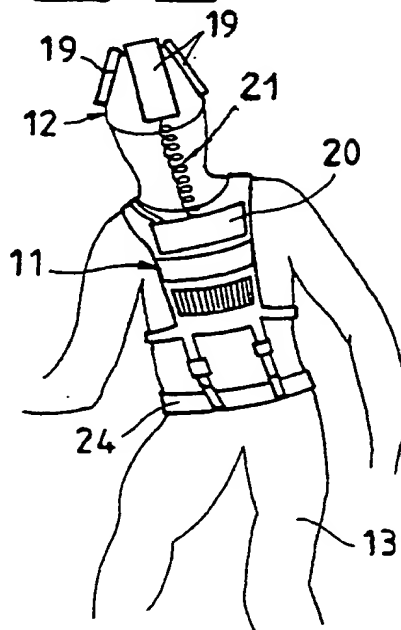
filters (52), there also being provided a low-pass filter (53) on a power supply, an output of said amplifier (54) is clipped and made compatible with said microcontroller (56) by a Schmitt trigger (55)

5 which, with a 1% opening of the voltage, there being an additional low-pass filter (53), removes all the possible high frequency components which could interfere with the functioning of said microcontroller 56.

10 ~~11) Equipment according to claim 11, characterised in that to said microcontroller (56) are connected a direct hit indicator (59), a signaller (60) which indicates whether said weapon is unloaded, and a signaller (58) which detects the presence of~~  
15 ~~magazines (17, 40) in said weapon.~~

~~13) Equipment according to claim 12, characterised in that with said magazines (17, 40) disconnected or with said indicator (59) on, said microcontroller (56) prevents the said weapon from~~  
20 ~~being fired.~~

~~14) Equipment according to claim 11, characterised in that to said microcontroller (56) is connected a generator of differentiated sound effects.~~

Fig.1Fig.2Fig.3

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>81825</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 00/ 02045</b>	International filing date (day/month/year) <b>08/03/2000</b>	(Earliest) Priority Date (day/month/year) <b>10/03/1999</b>
Applicant  <b>AMBROSOLI, Franco et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1&2

☐ None of the figures.



## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/02045

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 F41G3/26

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F41G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ✓	US 5 344 320 A (INBAR MOTTI ET AL) 6 September 1994 (1994-09-06) abstract	1
A ✓	column 3, line 19 -column 5, line 19; figures 1-18	2,6-8, 10-12
A ✓	US 4 487 583 A (BRUCKER STEPHEN E ET AL) 11 December 1984 (1984-12-11) abstract	1-4,6-8, 14
A ✓	column 2, line 28 -column 11, line 20; figures 1-8	
A ✓	WO 99 09368 A (TIGER ELECTRONICS LTD) 25 February 1999 (1999-02-25) abstract	1,2,8
	page 5, line 20 -page 14, line 32; figures 1-6	
	--- -/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

20 April 2000

Date of mailing of the international search report

15/05/2000

Name and mailing address of the ISA

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Fax: (+31-70) 340-3016

Authorized officer

Blondel, F

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/02045

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓	US 4 899 039 A (TAYLOR LEO O ET AL) 6 February 1990 (1990-02-06) abstract; figure 1 -----	1-3

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/02045

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5344320	A	06-09-1994	IL	104823 A	12-03-1999
US 4487583	A	11-12-1984	AU	547179 B	10-10-1985
			AU	8463182 A	23-12-1982
			CA	1191258 A	30-07-1985
			EP	0067654 A	22-12-1982
			ES	513058 D	01-06-1983
			ES	8306871 A	16-09-1983
			ZA	8203828 A	30-03-1983
WO 9909368	A	25-02-1999	US	5904621 A	18-05-1999
			AU	9199098 A	08-03-1999
US 4899039	A	06-02-1990	NONE		